Major Topics

15.1 The Adolescent in Thought: My, My, How “Formal”
15.2 The Adolescent in Judgment: Moral Development
15.3 The Adolescent in School
15.4 The Adolescent at Work: Career Development and Work Experience
ADOLESCENCE: Cognitive Development

Truth or Fiction?

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I am a college student of extremely modest means. Some crazy psychologist interested in something called “formal-operational thought” has just promised to pay me $200 if I can make a coherent logical argument for the proposition that the federal government should under no circumstances ever give or lend [money] to needy college students. Now what could people who believe that possibly say by way of supporting that argument? Well, I suppose they could offer this line of reasoning.... —Flavell et al. (2002)

This “college student of extremely modest means” is thinking like an adolescent, quite differently from an elementary school child and from most junior high children. Children in the concrete-operational stage are bound by the facts as they are. They are not given to hypothetical thinking, to speculation about what might be. They are mainly stuck in what is. But the adolescent, like the adult, can ponder abstract ideas and see the world as it could be. Our “college student of extremely modest means” recognizes that a person can find arguments for causes in which he or she does not believe.

In this chapter, we learn about cognitive development in adolescence. We focus first on aspects of intellectual development, including Piaget’s stage of formal operations, adolescent egocentrism, and gender differences. We then turn to moral development, focusing on the views of Kohlberg and Gilligan. We conclude with a look at some areas that are strongly tied to cognitive development: school, vocational development, and work experience.
15.1 The Adolescent in Thought: My, My, How “Formal”

The growing intellectual capabilities of adolescents change the way they approach the world. The cognitive changes of adolescence influence how adolescents view themselves and their families and friends and how they deal with broader social and moral questions.

Piaget’s Stage of Formal Operations

QUESTION How did Piaget describe adolescent cognitive development? According to Piaget, adolescents may—but do not always—enter the stage of formal operations, which is the highest level of cognitive development in his theory. Adolescents in this stage have reached cognitive maturity, even if some rough edges remain. For many children in developed nations, the stage of formal operations can begin quite early—at about the time of puberty, 11 or 12 years of age. But some children reach this stage somewhat later, and some not at all. Piaget describes the accomplishments of the stage of formal operations in terms of the individual’s increased ability to classify objects and ideas, engage in logical thought, and hypothesize, just as researchers make hypotheses in their investigations. The adolescent in the stage of formal operations can think about abstract ideas and about concrete objects. The adolescent can group and classify symbols, statements, even theories—just as we classify certain views of child development as psychoanalytic theories, learning theories, or sociocultural theories, even if they differ quite a bit in their particulars. Formal operations are flexible and reversible. Adolescents are thus capable of following and formulating arguments from their premises to their conclusions and back once more, even if they do not believe in them. Hypothetical thinking, the use of symbols to represent other symbols, and deductive reasoning enable the adolescent to more fully comprehend the real world and to play with the world that dwells within the mind alone.

Hypothetical Thinking

In formal-operational thought, adolescents discover that they can think about “what might be” rather than just “what is.” Adolescents can project themselves into situations that transcend their immediate experience, and for this reason, they may become wrapped up in lengthy fantasies (Amsel, 2011). Many adolescents can explore endless corridors of the mind, perceiving what would happen as one decision leads to another point where a choice presents itself—and then still another decision is made. Adolescents become aware that situations can have different outcomes. They can think ahead, systematically trying out various possibilities in their minds.

You may think of scientists as people in white lab coats, with advanced degrees and a devotion to exploring uncharted territory. And some are like that, of course. But many more wear blue jeans and experiment with their hair and with ways of relating to people whom they find attractive. Many adolescents in the stage of formal operations do not consider themselves interested in science, yet they conduct research daily to see whether their hypotheses about themselves and their friends and teachers are correct. These are not laboratory experiments that involve calipers or Bunsen burners. It is more common
for adolescents to explore uncharted territory by trying on different clothes and “attitudes” to see which work best for them.

Adolescents, who can look ahead to multiple outcomes, may also see many possibilities for themselves. Some recognize that they can, to a large extent, fashion themselves according to their own images of what they are capable of becoming. In terms of career decisions, the wealth of possible directions leads some adolescents to experience anxiety about whether they will pick the career that really is them and to experience a sense of loss about the possibility that they may be able to choose only one.

This capacity to look ahead, to fashion futures, also frequently leads to utopian thinking. Just as adolescents can foresee many possibilities for themselves, they can also imagine different outcomes for suffering humanity. “What if” thinking enables adolescents to fashion schemes for putting an end to hunger, disease, and international strife.

**Sophisticated Use of Symbols**

Children in elementary school can understand what is meant by abstract symbols such as 1 and 2. They can also perform operations in which numbers are manipulated—added, subtracted, and so on. But now consider $x$, that unknown (and sometimes elusive) quantity in algebra. This $x$ may be a familiar letter of the alphabet, but its designation as a symbol for an unknown quantity is a formal abstract operation. One symbol (an $x$) is being made to stand for something just as abstract (the unknown). Children up to the age of 11 or 12 or so usually cannot fully understand this concept, even if they can be taught the mechanics of solving for $x$ in simple equations. But older, formal-operational children show a sophisticated grasp of the nature of symbols. They can grasp intuitively what is meant by $x$. Formal-operational children, or adolescents, can perform mental operations with symbols that stand for nothing in their own experience.

These symbols include those used in geometry. Adolescents work with points that have no dimensions, lines that have no width and infinite length, and circles that are perfectly round, even though they may never find them in nature. The ability to manipulate these symbols will eventually enable them to do work in theoretical physics or math or to obtain jobs in engineering or architecture. They learn to apply symbols to the world of tangible objects and materials.

Formal-operational individuals can also understand, appreciate, and sometimes produce metaphors. Metaphors are figures of speech in which words or phrases that ordinarily signify one thing are applied to another. We find metaphor in literature, but consider how everyday figures of speech also enhance our experience: *squeezing out* a living, *basking in the sunshine* of fame or glory, *hanging by a thread*, *jumping* to conclusions, and so on.
The Puzzle and the Pendulum

If you hang a weight from a string and set it swinging back and forth, you have a pendulum. Bärbel Inhelder and Jean Piaget (1959) used a pendulum to explore ways in which children of different ages go about solving problems. These investigators showed children several pendulums with different lengths of string and different weights at their ends, as shown in Figure 15.1. They attached the strings to rods and sent the weights swinging. They dropped the weights from various heights and pushed them with different amounts of force. The question they posed—the puzzle—was: What determines how fast the pendulum will swing back and forth?

The young researchers had varied

1. The amount of weight
2. The length of the string
3. The height from which the weight was released
4. The force with which the weight was pushed

The answer lies either in one of these factors or in some combination of them. That is, one factor, two factors, three factors, or all four factors could determine the speed of the pendulum.

One can try to solve this problem by deduction based on principles of physics, and experienced physicists might prefer a deductive, mathematical approach. However, one can also solve the problem by trying out each possible combination of factors and observing the results. This is an empirical approach. Because children (and most adults) are not physicists, they usually take the empirical approach.

Of the children observed by Inhelder and Piaget, those between the ages of 8 and 13 could not arrive at the correct answer. The fault lay largely in their approach, which was only partly systematic. They made some effort to account for the various factors but did not control carefully for every possibility. For example, one child compared a pendulum with a light weight and a short string to a pendulum with a heavy weight and a long string.

The 14- and 15-year-olds generally sat back and reflected before doing anything. Then, in contrast to the younger children, who haphazardly varied several factors at once, the older children tried to exclude each factor systematically. You could say that they used the “process of elimination,” as we often do with multiple-choice tests. Not all of the 14- and 15-year-olds solved the problem, but as a group, their approach was more advanced and more likely to succeed.

According to Inhelder and Piaget, the approach of the 14- and 15-year-olds typified formal-operational thought. The approach of the 8- to 13-year-olds typified concrete-operational thought. As with many other aspects of Piaget’s views and methods, we have to be flexible about Piaget’s age estimates for ability to solve the problem. Robert Siegler and his associates (1973), for example, were able to train 10-year-olds to approach the problem systematically and isolate the correct answer (drum roll!): the length of the string. Thus, education and training can influence the development of cognitive skills.

Reflect How did the adolescents in the study use an empirical approach to determine which factor controlled the speed of the pendulum?
let's begin with the premise “Industries should not be allowed to pollute the environment.” We then discover that Industry A pollutes the environment. An adolescent may argue to shut down Industry A, at least until it stops polluting. The logic is reasonable and the goal is noble enough, but Industry A may be indispensable to the nation at large, or many thousands of people may be put out of work if it is shut down. Other people might prefer to seek some kind of compromise.

Adolescents’ new intellectual powers often present them with what seem to be crystal-clear solutions to the world’s problems, and they may become intolerant of the relative stodginess of their parents. Their utopian images of how to reform the world make them unsympathetic to their parents’ earthbound pursuit of a livelihood and other mundane matters.

Re-evaluation of Piaget’s Theory
Piaget’s account of formal operations has received quite a bit of support. There appears to be little question that changes occur in the nature of reasoning between preadolescence and adolescence (Moshman, 2011). For example, research strongly supports Piaget’s view that the capacity to reason deductively does not emerge until adolescence (Johnson-Laird, 2010; Moshman, 2011).

But note that formal-operational thought is not a universal step in cognitive development. The ability to solve abstract problems, such as those found in algebra and the pendulum problem, is more likely to be developed in adolescents in technologically oriented Western societies or in major cities than in less well-developed areas or nations (Flavell et al., 2002; Moshman, 2011). Moreover, formal-operational thought may occur later than Piaget thought, or it may not develop at all. For example, many early adolescents (ages 13–16) still perform better on concrete problems than on abstract ones (Markovits & Lortie-Forgues, 2011). Reviews of the literature suggest that formal-operational thought is found among only 40–60 percent of first-year university students (Flavell et al., 2002; Moshman, 2011). Also, the same individual may do well on one type of formal-operational task and poorly on another. We are more likely to use formal-operational thought in our own academic specialties. Some of us are formal operational in math or science but not in the study of literature; for others, the opposite is true. Piaget (1972) recognized that adolescents may not always demonstrate formal-operational thought because they are unfamiliar with a particular task.

Adolescent Egocentrism: Centre Stage

**QUESTION** How is adolescent egocentrism shown in the imaginary audience and in the personal fable? Do you think that egocentrism is limited to the thought of preschool children, who have difficulty taking the perspective of other people in the three-mountains test? Wrong. Yes, teenagers are capable of hypothetical thinking, and they can argue for causes in which they do not believe (if you pay them enough to do so). However, they also can show a somewhat different brand of egocentrism. Adolescents comprehend the ideas of other people, but they have difficulty sorting out those things that concern other people from the things that concern themselves.

**The Imaginary Audience**
Many adolescents fantasize about becoming famous (check out all the social media profiles and personal accounts) who are adored by millions. The concept of the **imaginary audience** achieves part of that fantasy—sort of. It places the adolescent on stage, but she or he is surrounded more by critics than by admirers. An adolescent tends to assume that other people
are more concerned with his or her appearance and behaviour than they really are (Elkind, 1967, 1985; Martin & Sokol, 2011). **TRUTH OR FICTION REVISITED:** Thus, it is true that adolescents generally see themselves as being on stage—with countless eyes peering in on them. This self-perception may account for the common adolescent intense desire for privacy. The concept of the imaginary audience helps explain why teenagers are so preoccupied with their appearance. It helps explain why the mirror is the constant companion of the teenager, who grooms endlessly and searches out every facial blemish. The imaginary audience may also help explain why it is the adolescent who is most vulnerable to eating disorders to try to perfect her or his appearance (Fox et al., 2009). Being caught up with the mirror seems to peak sometime during Grade 8 and declines over the remainder of adolescence.

Whereas some researchers view the emergence of the imaginary audience purely in cognitive-developmental terms, others believe that many adolescents are responding to increased social scrutiny (Bell & Bromnick, 2003). One research group attributes the imaginary audience more to social anxiety than to cognitive development (Kelly et al., 2002).

The Imaginary Audience
Adolescents tend to feel that other people are continuously scrutinizing their appearance and behaviour. This may explain why so many adolescents worry about every facial blemish and spend long hours grooming.

**personal fable** The belief that our feelings and ideas are special and unique and that we are invulnerable; one aspect of adolescent egocentrism.

The Personal Fable
Spider-Man and the Fantastic Four, stand aside! Because of the personal fable, many adolescents become action heroes, at least in their own minds. If the imaginary audience puts adolescents on stage, the personal fable justifies being there. The **personal fable**, another aspect of adolescent egocentrism, is the belief that one’s thoughts and emotions are special and unique (Aalsma et al., 2006). It also includes the common adolescent belief that one is all but invulnerable, like Superman or Wonder Woman. **TRUTH OR FICTION REVISITED:** It is normal for male adolescents to think of themselves as action heroes and to act as though they are made of steel.

The personal fable is related to such behaviours as showing off and risk taking (Alberts et al., 2007; Steinberg, 2011). Some adolescents erroneously assume that it is safe to reveal personal information, including their identities, to strangers on Internet chat sites (McCarty et al., 2011). Many adolescents assume that they can smoke with impunity. Cancer? “It can’t happen to me.” They may drive recklessly. They may engage in spontaneous unprotected sexual activity, assuming that sexually transmitted infections (STIs) and unwanted pregnancies happen to other people, not to them. Ronald King (2000), of the HIV Community Coalition of Washington, DC, put it this way: “All youth—rich, poor, black, white—have this sense of invincibility, invulnerability.” Adolescents are more likely than their parents to minimize risks (Nowinski, 2007; Steinberg, 2011).

The specialness and uniqueness of the adolescent experience? Many adolescents believe that their parents and other adults—even their peers—could never feel what they are feeling or know the depth of their passions. “You just don’t understand me!” claims the adolescent. But, at least often enough, we do.
Gender Differences in Cognitive Abilities

**QUESTION** Are there gender differences in cognitive abilities? Although females and males do not differ noticeably in overall intelligence, beginning in childhood gender differences appear in certain cognitive abilities (Johnson & Bouchard, 2007). Females are somewhat superior to males in verbal ability. Males, on the other hand, seem somewhat superior in visual–spatial skills. The picture for mathematics ability is more complex, with females excelling in some areas and males excelling in others. Let’s take a closer look at these gender differences.

**Verbal Ability**

Verbal abilities include reading, spelling, grammar, oral comprehension, and word fluency. As a group, females surpass males in verbal ability throughout their lives (Halpern, 2012). These differences show up early. Girls seem to acquire language faster than boys. They make more prelinguistic vocalizations, utter their first word sooner, and develop larger vocabularies. Boys in Canada are more likely than girls to have reading problems, ranging from reading below grade level to learning disorders (Brun et al., 2009).

Why do females excel in verbal abilities? For one thing, parents talk more to their infant daughters than to their infant sons (see Chapter 7). This encouragement of verbal interaction may be connected with girls’ relative verbal precocity. Because of this early language advantage, girls may rely more on verbal skills to interact with people, thus furthering their abilities in this area (Halpern, 2012).

How do we account for gender differences in reading? Biological factors such as the organization of the brain may play a role, but do not discount cultural factors. One issue is whether a culture stamps reading as a gender-neutral, masculine, or feminine activity (Goldstein, 2005). Consider Nigeria and England. Reading is looked on as a masculine activity in these nations, and boys traditionally surpass girls in reading ability (and other academic skills). In Canada and the United States, however, reading tends to be stereotyped as feminine, and girls tend to excel in reading in these nations. People of all ages and all cultures tend to apply themselves more diligently to pursuits that they believe are “meant” for them—whether it is the life of the nomad, ballet, ice hockey, or reading.

**Visual–Spatial Ability**

Visual–spatial ability is the ability to visualize objects or shapes and to mentally manipulate and rotate them. As you can imagine, this ability is important in such fields as art, architecture, and engineering. Boys begin to outperform girls on many types of visual–spatial tasks starting at age eight or nine, and the difference persists into adulthood (Andreano & Cahill, 2009; Yazzie, 2010). The gender difference is particularly notable on mental rotation tasks (see Figure 15.2 ■), which require imagining how objects will look if they are rotated in space.

What is the basis for the gender difference in visual–spatial skills? A number of biological and environmental explanations have been offered. One biological theory that has received some attention is that visual–spatial ability is influenced by sex-linked recessive genes on the X sex chromosome. But this theory has not been supported by research (Halpern, 2012).

Some researchers link visual–spatial performance to evolutionary theory and sex hormones. It may be related to a genetic tendency to create and defend a territory (Ecuyer-Dab & Robert, 2004). One environmental theory is that gender stereotypes influence the spatial experiences of children. Gender-stereotyped “boys’ toys,” such as blocks, Legos, and Erector sets, provide more
practice with spatial skills than gender-stereotyped “girls’ toys,” such as baby dolls, Barbies, and play kitchens. Boys are also more likely to engage in sports, which involve moving balls and other objects through space (Leaper & Bigler, 2011). Boys are allowed to travel farther from home than girls are, which gives them greater opportunities for exploration—and a larger “home range” (Halpern, 2012). It is no secret that participation in spatially related activities is associated with better performance on visual–spatial tasks.

Mathematical Ability
For half a century or more, it has been believed that male adolescents generally outperform females in mathematics, and research has tended to support that belief (Collaer & Hill, 2006; Halpern, 2012). TRUTH OR FICTION REVISITED: However, a recent study by Hyde and her colleagues (2008) of some 7 million students in Grades 2 through 11 found no gender differences for performance...
in mathematics on standardized tests. The complexity of the test items apparently made no difference. Nevertheless, most North Americans have different expectations for boys and girls, and these expectations may still dissuade girls from pursuing careers in science and math (Hyde & Mertz, 2009).

Carol Dweck (2007) and her colleagues found that girls appeared to be more vulnerable than boys to losing their self-confidence when faced with difficult math problems. Another study found that mathematically gifted Grade 6 girls fared poorly when they were overly perfectionistic or anxious about taking tests, especially tests that were timed (Tsui & Maziocco, 2007). Many female adolescents, especially when they are under pressure, are apparently vulnerable to feeling threatened by the stereotype that males are better than females at math. The threat is experienced as anxiety that distracts them from the tasks at hand and impairs their performance (Muzzatti & Agnoli, 2007). On the other hand, when female adolescents’ mothers strongly reject gender stereotypes concerning ability in math and science, their daughters are less likely to show stereotype vulnerability in tackling math problems (Tomasetto et al., 2011). In Lachance’s and Mazzocco’s (2006) longitudinal analysis of sex differences in math and spatial abilities in primary school children, they did not find any sex differences on standardized math tested or in any specific math area or spatial skills. One possibility presented by the authors is that cohort effects (recall this term from Chapter 1) indicate that sex differences in math may be diminishing over generations—at least in the primary levels. The same has not been found in the secondary levels, however. Certain authors have found that while students tend to be quite similar in the elementary years, males tend to gain an edge in the secondary school years (Leahey & Guo, 2001; Mau & Lynn, 2000; Sáinz & Eccles, 2012). Further, a study by Sáinz and Eccles (2012) found that males in secondary school have a higher self-concept than their female counterparts, despite the lack of gender differences in performance.

What, then, shall we conclude about gender differences in cognitive abilities? First, it appears that girls show greater verbal ability than boys but that boys have better visual–spatial skills (Bailey, 2003; Halpern, 2012). However, gender differences in cognitive skills are group differences, not individual differences. That is, the difference in, say, reading skills between a male who reads well and a male who is dyslexic is greater than the average group gender difference in reading ability. Moreover, despite group differences, hundreds of thousands of females exceed the average male in visual–spatial skills. Similarly, despite group differences, millions of males exceed the average Canadian female in writing, spelling, and articulation. Hundreds of thousands of Canadian women perform well in domains that once were considered masculine, such as medicine and law (Whitmarsh & Wentworth, 2012). Moreover, in most cases, differences in cognitive skills are small or nonexistent in societies in which females are empowered, including most parts of the North America, Europe, Japan, and South Korea (Else-Quest et al., 2010; Else-Quest & Grabe, 2012).

### Active Review

1. The stage of ____________ operations is the final stage in Piaget’s scheme.

2. Adolescent ____________ is connected with the concepts of the imaginary audience and the personal fable.

3. females are somewhat (superior or inferior?) to males in verbal ability.

4. Males are somewhat (superior or inferior?) in visual–spatial ability.

5. Research links ____________ hormones to visual–spatial performance.

Reflect & Relate: Did you have a strong need for privacy when you were an adolescent? If so, do you recall why? Can you explain this need in cognitive-developmental terms?
15.2 The Adolescent in Judgment: Moral Development

**QUESTION**» What are Kohlberg’s views on moral reasoning in adolescence?

Moral development in adolescence is a complex issue, with both cognitive and behavioural aspects. As noted in Chapter 12, children in early childhood tend to view right and wrong in terms of rewards and punishments. Lawrence Kohlberg referred to such judgments as preconventional. In middle childhood, conventional thought tends to emerge, and children usually begin to judge right and wrong in terms of social conventions, rules, and laws (see Table 12.1 on page XXX). In adolescence, many—though not all—individuals become capable of formal-operational thinking, which enables them to derive conclusions about what they should do in various situations by reasoning from ethical principles. And many of these individuals engage in postconventional moral reasoning. They deduce proper behaviour from general principles that they apply across many different situations, just as they might deduce that whales are mammals because whales feed their young with breast milk.

**The Postconventional Level**

In the postconventional level, moral reasoning is based on the person’s own moral standards. Consider the case of Heinz told in Figure 15.3. Moral judgments are derived from personal values, not from conventional...
standards or authority figures. In the contractual, legalistic orientation of Stage 5, it is recognized that laws stem from agreed-on procedures and that many rights have great value and should not be violated (see Table 15.1 ▪). But under exceptional circumstances, such as in the case of Heinz, laws cannot bind the individual. A Stage 5 reason for stealing the drug might be that it is the right thing to do, even though it is illegal. Conversely, it could be argued that if everyone in need broke the law, the legal system and the social contract would be destroyed.

Stage 6 thinking relies on supposed universal ethical principles, such as those of human life, individual dignity, justice, and reciprocity. Behaviour that is consistent with these principles is considered right. If a law is seen as unjust or as contradicting the rights of the individual, it is wrong to obey it.

In the case of Heinz, it could be argued from the perspective of Stage 6 that the principle of preserving life takes precedence over laws prohibiting stealing. Therefore, it is morally necessary for Heinz to steal the drug, even if he must go to jail. Note that it could also be asserted, from the principled orientation, that if Heinz finds the social contract or the law to be the highest principle, he must remain within the law, despite the consequences.

Stage 5 and Stage 6 moral judgments were virtually absent among the seven- and ten-year-olds in Kohlberg’s (1963) sample of American children. They increased in frequency during the early and middle teens. By age 16, Stage 5 reasoning was shown by about 20 percent of adolescents, and Stage 6 reasoning was demonstrated by about 5 percent of adolescents. However, Stage 3 and Stage 4 judgments were made more frequently at all ages—7 through 16—studied by Kohlberg and other investigators (Colby et al., 1983; Commons et al., 2006; Rest, 1983) (see Figure 15.4 ▪). **TRUTH OR FICTION REVISITED:** It is not true that most adolescents make moral decisions based on their own ethical principles. Postconventional moral reasoning appears no earlier than in adolescence if it appears at all, but most adolescents reason at lower levels.

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<td><strong>Kohlberg’s Postconventional Level of Moral Development</strong></td>
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<td><strong>Stage</strong></td>
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<td><strong>Stage 5:</strong> Contractual, legalistic orientation: One must weigh pressing human needs against society’s need to maintain social order.</td>
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<td><strong>Stage 6:</strong> Universal ethical principles orientation: People must follow universal ethical principles and their own conscience, even if it means breaking the law.</td>
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Source: Adapted from Kohlberg (1963).
Cross-Cultural Differences in Moral Development

Cultural background is a powerful shaper of moral reasoning. Kohlberg found postconventional thinking among a minority of American adolescents, and it was all but absent among adolescents in villages in Mexico, Taiwan, Turkey (Kohlberg, 1969), and the Bahamas (White et al., 1978). Reviews of the literature conclude that postconventional reasoning is more likely to be found in urban cultural groups and in middle-class populations but that it is rarely seen in traditional folk cultures (Nucci & Gingo, 2010).

Another cross-cultural study indicates that the moral reasoning of children from Western industrialized countries such as Germany, Poland, and Italy is similar to that of North American children from urban areas (Boehnke et al., 1989). On the other hand, the moral reasoning of North American children and Israeli city children is more self-oriented and less oriented to the needs of others than the reasoning of Israeli kibbutz children (Eisenberg et al., 1990). These differences are consistent with the differences in the children's social environments. The kibbutz is a collective farm community that emphasizes cooperative relationships and a communal philosophy.

A similar pattern has been found in comparisons of middle-class American and Hindu Indian children and adults. Hindu Indians are more likely to show a caring orientation in making moral judgments, whereas Americans more often demonstrate a justice orientation. These findings are consistent with the greater emphasis that Hindu Indian culture puts on the importance of taking responsibility for others (Nucci & Gingo, 2010). Kohlberg's theory was critiqued by cultural psychologist Richard Shweder. He has put forth an alternative to Kohlberg's coding. Shweder...
classifies moral reasoning as postconventional when individuals base their reasoning on any form of universal moral obligation (Shweder et al., 1997, 1998). The coding proposed by Shweder involves the *ethic of autonomy* (individuals are the primary moral authority as long as no harm is done to others), the *ethic of community* (individuals are members of social groups to which they have commitments and obligations, and moral reasoning is based on their roles and responsibilities in their families and communities), and the *ethic of divinity* (individuals as spiritual entities who are affected by divine authority; moral reasoning is based on traditional religious authority). With Shweder’s scheme, more people are at the postconventional reasoning level.

**Gender Differences in Moral Development—Justice versus Caring?**

When moral development was initially studied some researchers claim that males reason at higher levels of moral development than females in their responses to Heinz’s dilemma. For example, Kohlberg and Kramer (1969) reported that the average stage of moral development for men was Stage 4, which emphasizes justice, law, and order. The average stage for women was reported to be Stage 3, which emphasizes caring and concern for others.

However, Carol Gilligan (Gilligan, 1977, 1982, 2011) argues that this gender difference reflects patterns of socialization that are in keeping with gender stereotypes rather than maturation. To make her point, Gilligan provides two examples of responses to Heinz’s dilemma. Eleven-year-old Jake views the dilemma as a math problem. He sets up an equation showing that life has greater value than property. Heinz should thus steal the drug. Eleven-year-old Amy, on the other hand, notes that stealing the drug and letting Heinz’s wife die would both be wrong. Amy searches for alternatives, such as getting a loan, stating that it would profit Heinz’s wife little if he went to jail and was no longer around to help her.

Although Gilligan sees Amy’s pattern of reasoning as being just as sophisticated as Jake’s, it would be rated as showing a lower level of moral development in Kohlberg’s system. Gilligan asserts that Amy, like other girls, has been socialized to focus on the needs of others and forgo simplistic judgments of right and wrong. Jake, by contrast, has been socialized to make judgments based on logic. To him, clear-cut conclusions are to be derived from a set of premises. Amy was aware of the logical considerations that struck Jake, but she processed them as one source of information—not as the sole source. It is ironic that Amy’s empathy, a trait that has “defined the ‘goodness’ of women,” marks Amy “as deficient in moral development” (Gilligan, 1982, p. 18).

Kohlberg, Gilligan, and other researchers tend to agree that, in making moral judgments, females are more likely to show a caring orientation, whereas males are more likely to assume a justice orientation (Jorgensen, 2006). But there remains a dispute about whether this difference means that girls reason at a lower level than boys do (Gilligan, 2011; Gottschalk, 2007). Kohlberg, by the way, viewed Gilligan’s ideas as an extension of his own views, not as a repudiation of them, and Gilligan largely supported Kohlberg’s stage theory and his claim of its universality (Gilligan, 2011; Snarey & Samuelson, 2008).

A thorough review of the gender and morality debate is provided by Professor Lawrence Walker from the University of British Columbia. In his careful review of gender and moral development research, Walker (2006) explains that very little variability in moral reasoning development is due to gender. Walker further argues that humans use a combination of various orientations, while also being influenced by contextual and situational factors. In fact, Walker underscores the need to broaden the focus on moral development beyond
interpersonal conflicts and moral reasoning, the way in which the Kohlberg and Gilligan debate has, and instead look to interpersonal (such as socialization) aspects of moral development as well as individual (goals, values, identity) variables to gain a richer understanding of moral development.

**Moral Behaviour and Moral Reasoning: Is There a Relationship?**

Is there a relationship between moral cognitive development and moral behaviour? Are individuals whose moral judgments are more mature more likely to engage in moral behaviour? The answer seems to be yes; many studies have found positive relationships between a person's level of moral development and his or her behaviour (Nucci & Gingo, 2010).

Individuals whose moral reasoning is at Stage 2 cheat, steal, and engage in other problem behaviours more often than peers whose moral reasoning is at higher stages (Nucci & Gingo, 2010). Adolescents with higher levels of moral reasoning are more likely to exhibit moral behaviour, including altruistic behaviour (Hart et al., 2003; Maclean et al., 2004).

Experiments also have been conducted in the hope of advancing moral reasoning as a way of decreasing immoral behaviour (Palmer, 2005). A number of studies have found that group discussion of moral dilemmas elevates delinquents' level of moral reasoning (Smetana, 1990). Is moral behaviour affected as well? In one study, discussions of moral dilemmas improved moral reasoning and reduced incidents of, for example, school tardiness, behaviour referrals, and police and court contacts among adolescents with behavioural problems (Arbuthnot & Gordon, 1988).

**Evaluation of Kohlberg’s Theory**

Despite a number of challenges, evidence appears to continue to support Kohlberg's view that the moral judgments of children develop in an upward sequence (Boom et al., 2007), even though most children do not reach post-conventional thought. Postconventional thought, when it is found, first occurs during adolescence.

Why doesn’t postconventional moral reasoning appear until age 13 or so? A number of studies suggest that formal-operational thinking is a prerequisite and that education is likely to play a role (Boom et al., 2007; Patenaude et al., 2003). Postconventional reasoning appears to require the capacities to understand abstract moral principles and to empathize with the views and feelings of others. However, neither formal-operational thought nor education guarantees the development of postconventional moral judgments.

Kohlberg believed that the stages of moral development follow the unfolding of innate sequences and are therefore universal. But he may have underestimated the influence of social, cultural, and educational institutions (Dawson, 2002; Nucci & Gingo, 2010). Parents are also important. Inductive disciplinary methods, including discussions of the feelings of others, advance moral reasoning (Nucci & Gingo, 2010).

Postconventional thinking is all but absent in developing societies, and it accounts for only a minority of adolescents’ judgments in North America (Commons et al., 2006; Snarey, 1994). Perhaps postconventional reasoning reflects Kohlberg's personal ideals rather than a natural, universal stage of development (Helwig, 2006). Stage 6 reasoning is based on the acceptance of supposedly universal ethical principles. The principles of freedom, justice, equality, tolerance, integrity, and reverence for human life have high appeal for most North American adolescents who are reared to idealize these principles.
As we look around the world—and at many of the horrors of the unfolding 21st century—we find that principles such as freedom and tolerance of differences are not universally admired. They may reflect Western cultural influences more than the cognitive development of the child. In many cultures, to be honest about it, violation of the dominant religious tradition is a capital offence, and freedom to worship—or the freedom not to worship—is unheard of. In his later years, Kohlberg (1985) dropped Stage 6 reasoning from his theory in recognition of these problems.

Finally, we must recognize that Kohlberg’s view of moral reasoning and moral development is not the only one (Krebs & Denton, 2006; Lapsley, 2006).

Active Review

6. In Kohlberg’s __________ level, moral reasoning is based on the person’s own moral standards.

7. Many studies have found (positive or negative?) relationships between the child’s level of moral development and his or her moral behaviour.

Reflect & Relate: What is your stage of moral development, according to Kohlberg? How do you know? How do you feel about that?

15.3 The Adolescent in School

How can we emphasize the importance of the school to the development of the adolescent? Adolescents are highly influenced by the opinions of their peers and their teachers. Their self-esteem rises or falls consistently with the levels of their skills.

Making the Transition from Elementary School

QUESTION » How do adolescents make the transition from elementary school to middle, junior high, or high school? Most students make at least one and sometimes two transitions to a new school before they complete high school. Think back to your own school days. Did you spend the years from kindergarten to Grade 8 in one building and then move on to high school? Did you instead attend elementary school through Grade 6 and then go to junior high for Grades 7 through 9 before starting high school? Or did you complete kindergarten through Grades 4 or 5 in one school, then attend a middle school for Grades 5 or 6 through 8, and then move on to high school for Grades 9 through 12? (This has become the most common pattern in recent years.)

The transition to middle, junior high, or high school generally involves a shift from a smaller neighbourhood elementary school with self-contained classrooms to a larger, more impersonal setting with many more students and with different teachers for different classes (Hill & Tyson, 2009). These changes may not fit very well with the developmental needs of early adolescents. For example, adolescents express a desire for increased autonomy, yet teachers in junior high typically allow less student input and exert more behavioural control than teachers in elementary school (Crosnoe, 2011). Moreover, in the shift to the new school, students move from being the “top dog” (the oldest and most experienced students) to being the “bottom dog.” These changes are not the only ones facing the early adolescent. Many youngsters also are going through the early stages of pubertal development at about the same time they move to a new school.

How well do students adjust to the transition to a new school? Much of the research has examined children’s experiences as they move from elementary school to junior high school. The transition to the new school setting often is
accompanied by a decline in grades and in participation in school activities (Hill & Tyson, 2009). Students may also experience a drop in self-esteem and an increase in psychological distress (Crosnoe, 2011; Rudolph & Flynn, 2007). A German study (Ball et al., 2006) found a connection between an adolescent’s psychological adjustment and his or her grades by the end of the first year in high school.

**TRUTH OR FICTION REVISITED:** The transition from elementary school appears to be more difficult for girls than for boys. In one study, girls who switched to junior high for Grade 7 showed a decrease in self-esteem, whereas girls who stayed in the same school from kindergarten through Grade 8 did not. Boys’ self-esteem did not change when they switched to junior high (Simmons & Blyth, 1987). The difference may reflect the fact that girls are more likely to be going through puberty at about this time. Girls at this age are also likely to attract the attention of boys in higher grades, whereas younger boys are not likely to be of much interest to older girls. Girls are experiencing major life changes, and children who experience several life changes at once find it more difficult to adjust to a new school (Tobbell, 2003).

But transition need not be that stressful. Students whose elementary and middle schools and caregivers all work together to smooth out the waves make the transition more easily (Garner & Thomas, 2011; Rice et al., 2011). One longitudinal study followed the progress of students who were placed in an elementary school program in which they were given suggestions for solving social problems and making social decisions. For example, they were shown how one can handle disagreements without arguing or resorting to violence. When followed in high school four to six years later, these students showed higher levels of prosocial behaviour and fewer conduct problems than students who had not been in the program (Elias et al., 2003). Some middle schools create a more intimate, caring atmosphere by, for instance, establishing smaller schools within the school building. Others have summer “bridge programs” between middle school and high school. These programs introduce students to the new school culture and strengthen their academic skills.

**Dropping Out of School**

**QUESTIONS** What are the consequences of dropping out of school? Why do adolescents drop out? School is a key path to success in our society, but not all adolescents complete high school.

Completing high school is one of the most critical developmental tasks facing adolescents. The consequences of dropping out can be grim indeed. High school dropouts are more likely to be unemployed (Wald & Losen, 2007). They make lower salaries: Research suggests that each year of education, from grade school through graduate school, adds about 16 percent to an individual’s lifetime earnings (Passell, 1992). Looking at it from another perspective, the lifetime earnings of high school dropouts are about $270 000 less than those of high school graduates (Catterall, 2011). Dropouts are also more likely to exhibit problem behaviours, including delinquency, criminal behaviour, and substance abuse (Donovan & Wells, 2007; Wald & Losen, 2007). However, it is sometimes difficult to disentangle the consequences of dropping out from its causes. A pattern of delinquent behaviour, for example, might precede as well as follow dropping out.
Who Drops Out?

It is difficult to estimate the magnitude of the school dropout problem because education falls under different provincial jurisdictions and reporting systems. In Canada, the dropout rate has fallen over the past decade (see Figure 15.5). Quebec, Manitoba, and Alberta have the highest dropout rates in the country at 10.9 percent, 10.6 percent, and 10.4 percent, respectively.

A CLOSER LOOK

How Parents Can Help Early Adolescents in School

Early adolescence is often marked by declines in academic performance due to changes in developmental processes, family relationships, and the switch from a local elementary school to a more centralized middle school (Hill & Tyson, 2009). Changes in developmental processes include biological and cognitive developments, social developments, and renegotiation of family relationships, particularly the parent-adolescent relationship (Grolnick et al., 2007).

Parental involvement is one of the key factors in helping early adolescents make the transition to middle school—involvement not only with the adolescent but also with the school (Hurd et al., 2012). Hill and Tyson (2009) conducted a meta-analysis of 50 studies, highlighting various kinds of parental involvement to determine which kinds are helpful and which, if any, are not. The authors noted three kinds of parental involvement in the literature on education and academic achievement. First, home-based involvement includes strategies such as parent-child communication about school; involvement with schoolwork itself—for example, helping children with their homework; taking children to places and events that encourage academic success, such as libraries and museums; and creating an environment for learning in the home, such as having books, newspapers, and educational toys around. Second, school-based involvement includes visiting the school for events such as school advisory councils and open houses, volunteering at school, participating in school governance, and engaging in parent-school communication, such as teacher-parent conferences about children’s progress. School-based interactions increase parents’ knowledge of the curriculum and teaching methods and enhance the effectiveness of their involvement in the home (Hill & Taylor, 2004). Third, academic socialization involves communicating parental expectations about the value of education to children, making schoolwork “real” by connecting it to current events, building educational and occupational hopes and dreams, reviewing strategies for learning with children, and planning for the future.

However, Debbie Pushor, from the University of Saskatchewan, studies parent engagement and encourages us to go beyond involvement, which takes the form of responding to the school’s set events and agenda. In contrast, engagement would require that school and parents

Continued
Excessive school absence and reading below grade level are two of the earliest and strongest predictors of dropping out of school (Henry et al., 2012). Other risk factors include low grades, poor problem-solving ability, low self-esteem, problems with teachers, dissatisfaction with school, substance abuse, being old for one's grade level, and being male (Archambault et al., 2009; Henry et al., 2012). According to the 2010 Composite Learning Index Fact Sheet, Canadian high school males cite disinterest in school and labour opportunities as the two main reasons for ending their education. Adolescents who adopt adult roles early, especially marrying at a young age or becoming a parent, are also more likely to drop out (Bohon et al., 2007). Students from low-income households and large urban areas are at greater risk (National Center for Education Statistics, 2007). But not all dropouts come from low-income families. Middle-class youth who feel bored with school, alienated, or strongly pressured to succeed also are at risk (Wegner & Flisher, 2009).

Preventing Dropping Out
Many programs have been developed to prevent school dropout. Successful programs have some characteristics in common (Reschly & Christenson, 2006; Saxe et al., 2012):

- Early preschool interventions (such as Head Start)
- Identification and monitoring of high-risk students throughout the school years
- Small class size, individualized instruction, and counselling
- Vocational components that link learning and community work experiences
- Involvement of families or community organizations
- Positive school climate
- Clear and reasonable educational goals (if you don’t know where you’re going, how you get there isn’t very important), student accountability for behaviour, and motivational systems that involve penalties and rewards
Most intervention efforts are usually not introduced until students are on the verge of dropping out—when it is usually too late.

Active Review

8. Teachers in junior high typically exert (more or less?) behavioural control than teachers in elementary school.
9. Students undergoing the transition from elementary school are more likely to experience a (rise or drop?) in self-esteem.
10. (Boys or Girls?) appear to be more negatively affected by the transition to junior high school.

11. High school dropouts are (more or less?) likely than high school graduates to be unemployed as adults.
12. (Boys or Girls?) are more likely to drop out of high school.

Reflect & Relate: Do you know people who dropped out of high school? Why did they drop out? What were the consequences of their dropping out?

15.4 The Adolescent at Work: Career Development and Work Experience

Deciding what job or career we will pursue after completion of school is one of the most important choices we make.

Career Development

QUESTION » How do adolescents make career choices? When Spencer was a child, he wanted to be an ophthalmologist or a lawyer. He became a psychologist and professor. His daughter at age five wanted to be a teacher, then at age ten a scientist.

Children’s career aspirations may not be practical at first. They become increasingly realistic—and often more conventional—as children mature and gain experience. In adolescence, ideas about the kind of work one wants to do tend to become more firmly established, or crystallized, but some people do not choose a particular occupation until the university years or even afterward (Rogers & Creed, 2011; Rottinghaus & Van Esbroeck, 2011). Nonetheless, a study conducted by Bardick and colleagues (Bardick et al., 2006a, 2006b) from the University of Lethbridge found that junior high students are able to think about future planning and hope to combine educational and vocational streams by studying and working part-time.

A Social-Cognitive Perspective

From a social-cognitive perspective, the factors that influence an adolescent’s choice of a career (Rogers & Creed, 2011) including the following:

- Competencies—his or her knowledge or skills
- “Encoding strategies”—that is, his or her way of viewing a career, or himself or herself in relation to a career
- Expectancies—his or her expectations about what will happen in a given career, including self-efficacy expectations—that is, his or her beliefs that he or she will be able to handle the tasks in a given career

Sometimes we plan our careers on the basis of our perceived abilities and personality traits (Rottinghaus & Van Esbroeck, 2011; Skorikov &
Sometimes our early work experiences point us in certain directions (Rogers & Creed, 2011).

Holland's Career Typology
Psychologists have devised approaches to matching personality traits with careers to predict adjustment in a given career. John Holland's (1997) RIASEC method, as used in his Vocational Preference Inventory, matches six personality types to various kinds of careers: realistic, investigative, artistic, social, enterprising, and conventional (see Figure 15.6). Within each “type” of career, some are more sophisticated than others and require more education and training.

**Conventional**
These people have clerical or numerical skills. They like to work with data, to carry out other people’s directions, or to carry things out in detail.

**Enterprising**
These people like to work with people. They like to lead and influence others for economic or organizational gains.

**Realistic**
These people have mechanical or athletic abilities. They like to work with machines and tools, to be outdoors, or to work with animals or plants.

**Investigative**
These people like to learn new things. They enjoy investigating and solving problems and advancing knowledge.

**Social**
This group enjoys working with people. They like to help others, including the sick. They enjoy informing and enlightening people.

**Artistic**
This group is highly imaginative and creative. They enjoy working in unstructured situations. They are artistic and innovative.

**Figure 15.6 Assessing an Adolescent’s Career Type by Attending a “Job Fair”**
Adolescents can gain insight into where they might fit in the career world by picturing themselves at a job fair such as the one illustrated here. Students and employers have a chat. As time passes, they discover mutual interests and begin to collect in groups accordingly. Adolescents can consider the types of people in the six groups by reading the descriptions for each. Then they can ask themselves, “Which group would I most like to join?” What does their answer suggest about the career choices that might be of greatest interest to them?
Realistic people, according to Holland, are concrete in thinking. They are mechanically oriented. They tend to be best adjusted in occupations that involve motor activity. Examples of such occupations are unskilled labour, such as attending gas stations; farming; and the skilled trades, such as auto repair, electrical work, plumbing, and construction work.

Investigative people are abstract in their thinking. They are creative and tend to be introverted but open to new experience. They tend to do well in college and university teaching and in research positions.

Artistic people also tend to be creative and open to new experience. As a group, they are emotional, interested in the emotional life, and intuitive. They tend to be happiest in the visual and the performing arts.

Socially oriented people tend to be outgoing (extraverted) and concerned about social welfare. They often are agreeable and have a need for affiliation. They gravitate toward occupations in teaching (kindergarten through high school), counselling, and social work.

Enterprising people tend to be adventurous. They tend to be outgoing and dominant. They gravitate toward industrial roles that involve leadership and planning. They climb the ladder in government and social organizations.

Conventional people thrive on routine. They are not particularly imaginative. They have needs for order, self-control, and social approval. They gravitate toward occupations in banking, accounting, clerical work, and the military.

Many people combine vocational types. A copywriter in an advertising agency might be both artistic and enterprising. Clinical and counselling
Adolescents in the Workforce

**QUESTIONS** » How many Canadian adolescents and young adults hold jobs? What are the pros and cons of adolescents working? Dylan, age 15, has a job at a grocery chain in the suburb of a major city. He has already saved $2000 toward the purchase of a car by working at the store after school and on weekends. Dylan is worried because of the increased demands on his time from peers, hockey team, school, and home responsibilities.

Life experiences help shape vocational development. One life experience that is common among Canadian teenagers is holding a job. In fact, about 54.5 percent of Canadian youth and young adults between the ages of 15 and 24 are employed (Statistics Canada, 2012).

**Prevalence of Adolescent Employment**

Chances are that you held a job in high school. Canadian adolescents lead busy lives. Figure 15.7 ■ offers an overview of how adolescents divide up their time during the day. They spend an average of seven hours a day in formal school settings, and are also involved in paid and unpaid work.

**Pros and Cons of Adolescent Employment**

The potential benefits of adolescent employment include developing a sense of responsibility, self-reliance, and discipline; learning to appreciate the

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Figure 15.7 ■ How Teens Spend Their Waking Hours  
Source: Statistics Canada.

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1 Average hours spent per day for the population aged 15 to 19.
value of money and education; acquiring positive work habits and values; and enhancing occupational aspirations (Porfeli, 2007). On the other hand, the meaning of work for adolescents—at least for middle-class adolescents—seems to have changed. Most adolescents who work do not do so to help support their families or to put money away for college. Although adolescents of lower socio-economic status work mainly to supplement the family income (Leventhal et al., 2001), most middle-class adolescents use their income for personal purchases, such as clothing, electronics, sports equipment, TVs, and car payments (Bachman et al., 2003). The proportion of earnings devoted to future school expenses or family expenses is small.

In addition, most employed adolescents work in service and retail jobs characterized by lower pay, high turnover, little authority, and little chance for advancement. They typically perform simple, repetitive tasks requiring no special skills, minimal supervision, and little interdependence with other workers (Staff et al., 2004). The type of job opportunities available to teens is also determined by geographic region they live in. Some question the benefits of such jobs.

**TRUTH OR FICTION REVISITED:** Adolescents who work after school, as a group (meaning there are exceptions), do get lower grades. Research indicates that the effects of teenage employment may be harmful, particularly for students who work long hours. Students who work more than 11–13 hours per week report lower grades, higher rates of drug and alcohol use, more delinquent behaviour, lower self-esteem, and more psychological problems than students who do not work or who work only a few hours a week (Dumont et al., 2009; Holloway, 2004). Grades and time spent on homework drop for students who work long hours. Use of drugs and alcohol increases (Ramchand et al., 2009). Adolescents who work longer hours also spend less time in family activities, are monitored less by their parents, and are granted more freedom with day-to-day decisions (DeSimone, 2006; Sabia, 2009; Singh & Ozturk, 2000).

Perhaps the most prudent course is for parents and educators to limit the number of hours that adolescents work. Some are tightening their regulations on the number of hours teenagers can work during the school year or are alternatively providing students with opportunities to receive formal credit for certain types of work experiences.

Throughout this chapter, we have seen that both parents and peers influence the intellectual, moral, and vocational development of adolescents. Adolescents’ relationships with family and friends, along with other aspects of their social and emotional development, are the topic of the final chapter.

### Active Review

13. Children’s career aspirations become increasingly __________ as they mature and gain experience.

14. Career choices of males and females are still to some degree influenced by traditional __________-role stereotypes.

15. An adolescent’s career self-__________ expectations are his or her beliefs that he or she will be able to handle the tasks in a given career.

16. What are some of the activities youth between the ages of 15 and 19 spend their non-school day hours on?

**Reflect & Relate:** When you were in high school, did you have a job after school and/or on weekends? What were the effects of working on your grades, your social life, and your social maturation?
15.3 The Adolescent in School
How do adolescents make the transition from elementary school to middle, junior high, or high school?
The transition to middle, junior high, or high school generally involves a shift from a smaller, neighbourhood elementary school to a larger, more impersonal setting. The transition is often accompanied by a decline in grades and a drop in self-esteem.

What are the consequences of dropping out of school?
Why do adolescents drop out?
High school dropouts are more likely to be unemployed and to earn lower salaries. Dropouts are more likely to show delinquent behaviours. Truancy and reading below grade level are factors in predicting school dropout.

15.4 The Adolescent at Work: Career Development and Work Experience
How do adolescents make career choices?
Children’s career aspirations are often not practical at first but become increasingly realistic as children mature and gain experience. Two of the factors that influence the choice of a career are abilities and personality traits.

How many Canadian adolescents and young adults hold jobs? What are the pros and cons of adolescents working?
More than half of youth and young adults hold some form of employment. The benefits of adolescent employment include developing a sense of responsibility, self-reliance, and discipline, and learning to appreciate the value of money and education. But students who work also report lower grades and other problems.

Key Terms

- formal operations W15-4
- personal fable W15-8
- self-efficacy expectations W15-21
- utopian W15-5
- postconventional level W15-12
- imaginary audience W15-7
- reciprocity W15-13
Go to Voyages in Development’s CourseMate at www.nelsonbrain.com, where you will find an interactive eBook, flashcards, Pre-Lecture Quizzes, Section Quizzes, Exam Practice, videos, and more.